

The Influence Mechanism of Sports Participation on Prosocial Behavior of College students

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Abstract: This research on college students' sports participation, psychological capital, the concept of prosocial behavior, measurement methods and the relationship between the comb, through questionnaire survey, to college students as the research object, explore the prosocial behaviors of college students' sports participation, psychological capital, the relationship between the study of sports to participate in the internal mechanism of the college students' prosocial behavior, The Mediating Role of Psychological Capital in the Influence of sports participation on Prosocial Behavior of College Students. On this basis, explore the application and scope of action of behavior participation, emotional participation and cognitive participation in sports participation, so as to provide more theoretical basis and practical guidance for college students to enhance social adaptation and healthy development. The results show that :(1) there is a significant correlation between sports participation and prosocial behavior. Behavioral participation, emotional participation and cognitive participation all have a positive and significant impact on prosocial behavior of college students.(2) There is also a significant correlation between sports participation and psychological capital. Behavioral participation, emotional participation and cognitive participation all have a positive and significant impact on psychological capital.(3) Psychological capital has a significant positive impact on college students' prosocial behavior, and self-efficacy, resilience, hope and optimism have a significant positive correlation with college students' prosocial behavior.(4) Psychological capital has a partial mediating effect on sports participation and prosocial behavior of college students.

1. Introduction

Physical education is an important part of education, and in the process of facing the world and the future, physical education has more unique value. Sports plays an irreplaceable role in promoting people's all-round development and cultivating high quality talents with both morality and ability. It is based on physiology, implements intervention behavior with the help of physical

activities, takes psychology as the intermediary, affects individual psychological development through sports activities, and extends to society. The concepts and norms learned in sports activities can be constantly tested in social practice [1]. It has a positive influence on the virtue, intelligence, physique and psychological quality of college students, and can better cultivate collectivism and patriotism [2]. The positive effects of sports participation on people's physical and mental health have been tested by many studies, but relatively few studies have explored the influence of sports participation on prosocial behavior of college students by means of sports participation. If the influencing mechanism is not clear, the cultivation of prosocial behavior of college students may not be able to grasp, and the positive role of sports can not be better played. In order to better cultivate college students' pro-social behaviors and encourage more implementation of pro-social behaviors, it is necessary to explore the influence mechanism of sports participation on pro-social behaviors and study how sports can promote people's positive cognition through enhancing psychological capital [3]. Therefore, this paper studies the influence of sports participation on college students' pro-social behavior from three aspects of sports participation behavior, emotion and cognition, and puts forward feasible suggestions for improving the occurrence of pro-social behavior.

2. Literature Review of Relevant Variables

2.1 The Relationship between Sports Participation and Prosocial Behavior

Sports have a significant positive effect on knowledge, emotion and consciousness [4]. Participating in sports is not only an effective way to promote physical and mental health, but also can enhance social cognition, learn social norms and improve the ability to adapt to society through social interaction. At the same time, sports activities can cultivate some excellent qualities and virtues, such as fairness and justice, solidarity and cooperation, etc. [5], which have a positive impact on prosocial behaviors. In existing studies, many investigators have verified the positive role of sports participation in promoting prosocial behavior. Experiments, questionnaires and other methods have proved that sports can promote the emotion, altruism and collaboration of prosocial behaviors [6]. Domestic research on the relationship between sports and prosocial behavior is mostly aimed at specific groups. Wang Yuqiao verified the promoting effect of positive personality priming on prosocial behaviors in middle school students' physical exercise by combining investigation and experimental research [7]. For has yet to receive the compulsory education of preschool education experiments, it is concluded that sports games have promoting effect on the development of pro-social behavior, to improve the bad behavior also to have certain effect, build the story background of the sports games can let the children to a better understanding of pro-social behavior as well as the important role, and in understanding the level to guide [8]. Alexander W et al explored the impact of physical activity on children's extracurricular prosocial behavior. After analyzing and comparing the differences in children's emotion control ability, interpersonal relationship formation ability, school adaptation ability and other prosocial behaviors before and after the experiment, it was concluded that the experimental group's emotion control ability, interpersonal relationship building ability and students' ability to adapt to school were improved [9]. QuiantaL et al. studied that prosocial behavior had a significant positive impact on physical activity in low-income communities. The results show that despite various challenges in social life, individual prosocial behavior plays an important role in improving sports promotion ability [10]. Damian modeled the physical activity, mental health and prosocial behavior of school-age children from the perspective of gender. In the predictive analysis, the physical activity index

showed statistically significant relationships in the linear model of externalization problem and internalization problem, the prosocial scale, and the linear model and quadratic model of male cases. The physical activity index of girls showed significant statistical relationship in the quadratic model of internalization problem and in the linear and quadratic models of prosocial scale [11].

2.2 The Relationship between Sports Participation and Psychological Capital

The psychological capital level of the group that regularly participated in physical activity was significantly higher than that of the group that did not. Because of its particularity, sports can enhance the interaction and cooperation of different types of individuals, which has an important influence on the cultivation of students' psychological capital. Li Yongrui, Ge Shuang et al., through demonstrating the interpretation of the cultivation function of sports psychological capital in *The Study of Sports*, put forward that we should attach importance to and explore the function of sports in the cultivation of students' psychological capital [12]. With the further development of sports, more and more scholars have realized the unique role of sports and proved the positive correlation between sports and psychological capital through a large number of empirical studies. Individuals in the process of participation in sports activities to improve physical quality, the development of self-efficacy, foster self-confidence, is to interact with other people or with mental toughness enhancement of the comparison and competition, constantly improve the positive [13], and to enhance the level of individual psychological health, enhance psychological capital has an important role in [14]. Sun Chongyong and Yang Zhongjun demonstrated the influence of physical activity on psychological capital in their research on the relationship between group physical exercise and psychological capital of middle school students. Participating in sports can make individuals more positive and optimistic, have higher expectations for their own abilities, and be willing to try difficulties and challenges. Therefore, taking part in physical exercise is an effective way to improve mental health [15].

2.3 The Relationship between Psychological Capital and Prosocial Behavior

Psychological capital has an important influence on prosocial behavior, and individuals with higher psychological capital are more inclined to engage in prosocial behavior [16]. At present, academic circles associate psychological capital with prosocial behavior, and there are not many studies on the relationship between the two. However, there are many studies on the relationship between various dimensions of psychological capital, such as resilience and self-efficacy, and prosocial behavior. A large number of studies have proved the correlation between self-efficacy and prosocial behavior. Individuals with high self-efficacy will master more emotional regulation strategies, keep a positive mental state and have more confidence in the complex problems they need to face, so they are more likely to show helping behaviors. Online altruism has become a hot topic in recent years, and it is of great practical significance to analyze individuals' prosocial behaviors in this environment in view of the hidden nature of the Internet and the convenience of information acquisition. Some scholars investigated the influence of family function on college students' online altruistic behavior, and concluded that psychological capital can significantly affect online altruistic behavior. Individuals with higher psychological capital are more responsible, and will carry out prosocial behavior even in the network environment. This influence mechanism is moderated by network interpersonal trust [17].

2.4 Literature Summary

This chapter mainly through consulting and sorting out relevant literature research, to master the theoretical development status of the research object. From the collation of theoretical results related to prosocial behavior, sports participation and psychological capital, it is found that there are abundant researches on prosocial behavior at present, and qualitative and quantitative researches are combined. Among them, the empirical research has a wide range. Prosocial behavior is taken as the outcome variable, and the research model is established together with other variables to discuss the relevant factors affecting prosocial behavior and promote the occurrence of prosocial behavior. There are relatively few studies, most of which are targeted at specific groups to explain the impact of sports on prosocial behavior and explore whether sports participation can promote prosocial behavior and the specific impact path. The research objects pay more attention to special groups such as children. Most studies show that sports promote prosocial behavior. More studies have directly discussed the relationship between sports participation and prosocial behavior, but there are few mechanisms and single methods to explore the two. In other words, what factors affect prosocial behavior through sports participation remains to be further explored. In recent years, there have been a lot of discussions on the mechanism of psychological capital, but most of them take enterprises, factories and other professional places as the research context to study how psychological capital improves employees' work performance. Many studies have taken psychological capital as a mediating variable to explore how it plays a role in the relationship between different variables, that is, psychological capital plays an explanatory or regulating role in the influence of some variables and reflects the internal operating mechanism. In college students, due to their special stages of development and psychological characteristics, the relevant researches on the mechanism of psychological capital need to be enriched and improved.

3. Survey Objects and Research Methods

3.1 Survey Subjects

This paper takes the influence of sports participation on prosocial behavior of college students as the research object, and selects college students in Shanghai as the research object. Universities in Shanghai gather scholars from all over the country. Living in Shanghai, which is rich in sports resources, students in these universities can be exposed to more forms of sports activities and have stronger perceptual effects in sports behavior, emotion and cognition, so as to better understand the concept of different dimensions of sports participation. Shanghai, as a pioneer in development, is constantly exploring new measures for the integration of sports and education, focusing on the integration of sports and education. Taking students as the main body and cultivating comprehensive talents has a good demonstration effect on the development of college students' sports. Data were collected from May 1, 2021 to May 29, 2021, and questionnaires were collected through online and offline channels. A total of 322 valid questionnaires were obtained after deleting low-quality questionnaires with low filling time and high answer consistency.

3.2 Research Methods

3.2.1 Literature Method

Based on the CNKI database, EBSCO sports full-text database, library resources, access and

organize the related books, documents and materials, clear the theoretical basis, this article relies on teasing out of sports participation, prosocial behaviors of college students, as well as the psychological capital concept, the related research results, the variable relationship between each other, It provides theoretical basis for the research hypothesis. In addition, search engines such as Baidu and Google are used to provide support for the practical needs of this study in the form of keywords.

3.2.2 Questionnaire Survey

In early February, 150 questionnaires were distributed to students in some colleges and universities in Shanghai for preliminary research. The ambiguous questions were checked, the reliability and validity of the recovered data were tested, and the questions whose CITC value was lower than 0.5 and the coefficient significantly increased after the elimination of this item were deleted. After improvement, a formal questionnaire was formed. 368 questionnaires were sent out through the questionnaire star, and 322 valid questionnaires were obtained after deleting the ones with low filling time and too high answer-induced to meet the requirements, with an effective rate of 87.5%.

3.2.3 Mathematical Statistics

This paper analyzed the collected data using SPSS data analysis software. Reliability tests, correlation analysis, and regression analysis were conducted on the sample data to investigate the interrelationships between sports participation, psychological capital, and pro-social behavior to verify whether the hypotheses were valid or not.

4. Measure Variables

4.1. Prosocial Behavior Tendency Scale

This article adopts the prosocial behavior of Cong WenJun revised scale, the scale in the psychologist Carlo localization based on establishment of prosocial behavior scale revision, the revised research on college students' group, through the inspection well, reliability and validity of total questionnaire coefficient is 0.85, can better reflect the respondents pro-social behavior. The scale included six dimensions of urgency, openness, anonymity, altruism, compliance and emotionality, with a total of 26 questions. Five-point Likert scoring method was adopted. The higher the score, the higher the level of prosocial behavior.

4.2 Sports Participation Scale

This study divides sports participation into three dimensions: behavioral participation, emotional participation and cognitive participation. Learning from Pan Lijia's learner participation scale to measure the degree of sports participation has good reliability and validity. Behavioral participation scale revised by Liang Deqing et al was used to test the level of physical activity of the subjects. Mainly from the exercise time, intensity and frequency of three aspects to measure the amount of activity in the past month. Each aspect is the corresponding grade and score, and the unified activity amount result is obtained after summarizing. The retest reliability of the scale was 0.83. Emotional participation refers to students' emotional experience in sports activities, and cognitive participation refers to students' understanding of sports value rules and other aspects in sports activities, which

includes 9 specific items.

4.3 Psychological Capital Scale

This study adopted the positive psychological capital questionnaire adapted by Kuo Zhang et al. In view of the limited application scope of the Chinese version of the Psychological Capital Scale, Kuo Zhang et al. developed the Positive Psychological Capital Questionnaire (PPQ), which is more suitable for Chinese college students. The questionnaire was adapted from the four-dimensional structure of Luthans, including 7 questions in the dimension of self-efficacy, 7 questions in the dimension of resilience, 6 questions in the dimension of optimism, and 6 questions in the dimension of hope, among which 4 reverse questions were set. It has good validity through empirical test and can better reflect the level of psychological capital of college students, which has been widely used in domestic empirical research.

5. Correlation Analysis of All Variables

Table 1: Correlation analysis table among variables

	Sports participation	Psychological capital	Prosocial behavior
Sports participation	1		
Psychological capital	0.493**	1	
Prosocial behavior	0.414**	0.585**	1

** Significantly correlated at 0.01 level (bilateral).

Table 1 is the correlation between sports participation, psychological capital and prosocial behavior tested by Pearson product difference correlation method. Sports participation is positively correlated with psychological capital and prosocial behavior, with correlation coefficients of 0.493 and 0.414 respectively. The higher sports participation is, the higher psychological capital is, and the stronger prosocial behavior is. There is also a significant positive correlation between psychological capital and prosocial behavior, and the correlation coefficient is 0.585, indicating that the higher the psychological capital, the stronger the prosocial behavior. In general, there is a significant positive correlation between the three variables.

5.1 Regression Analysis

5.1.1 Regression analysis of sports participation on prosocial behavior of college students

Table 2: regression analysis of sports participation dimensions on prosocial behavior

Dependent variable: prosocial behavior									
The model variables	Model 1	P	Mode 2	P	Model 3	P	Model 4	P	
Sports participation	0.414	0.00**							
Behavior in			0.357	0.00**					
The emotions involved					0.323	0.00**			
Cognition participation							0.395	0.00**	
R2	0.172		0.127		0.104		0.156		
Adjusted R2	0.169		0.125		0.101		0.153		
F	71.656		50.542		40.164		63.835		

** Significantly correlated at 0.01 level (bilateral).

Table 2 is the regression analysis of sports participation and prosocial behavior of each dimension. It can be seen from the table that the significance of sports participation on prosocial

behavior is 0.000, and the influence strength is 0.414, indicating that sports participation has a significant positive impact on prosocial behavior of college students. In the specific dimensions of sports participation, the significance of the model reached 0.001, indicating that behavioral participation, emotional participation and cognitive participation have a significant impact on college students' prosocial behavior. In terms of influence intensity, the beta coefficients were all positive, and the influence of behavioral participation was 0.357, emotional participation was 0.323, and cognitive participation was 0.395.

5.1.2 Regression analysis of sports participation on psychological capital

Table 3: Regression analysis of sports participation on psychological capital

Dependent variable: psychological capital									
The model variables	Model 1	P	Model 2	P	Model 3	P	Model 4	P	
Sports participation	0.493	0.00**							
Behavior in			0.381	0.00**					
The emotions involved					0.402	0.00**			
Cognition participation							0.467	0.00*	
R2	0.243		0.145		0.162		0.219		
Adjusted R2	0.241		0.142		0.159		0.216		
F	111.112		48.087		54.886		79.409		

** Significantly correlated at 0.01 level (bilateral).

Table 3 shows sports participation and regression analysis of various dimensions and psychological capital. Taking sports participation as independent variable and psychological capital as dependent variable, the regression results of model 1 are obtained. $P < 0.01$, indicating that sports participation has a significant impact on psychological capital, $\beta = 0.493$, indicating that sports participation has a significant positive correlation with psychological capital, H2 is valid. Secondly, the various dimensions of sports participation and psychological capital were analyzed by regression, and model 2, model 3 and model 4 were obtained. It can be seen from the table that behavioral participation, emotional participation and cognitive participation all have significant influence on psychological capital, and the influence coefficients are 0.381, 0.402 and 0.467 respectively.

5.1.3 Regression analysis of psychological capital on prosocial behavior of college students

Table 4: Regression analysis of psychological capital on Prosocial Behavior of college students

Dependent variable: psychological capital										
The model variables	Model 1	P	Model 2	P	Model 3	P	Model 4	P	Mode 5	P
Psychological capital	0.585	0.00**								
Self-efficacy			0.583	0.00**						
Toughness					0.228	0.00**				
Hope							0.466	0.00*		
Optimistic									0.678	0.00**
R2	0.342		0.34		0.052		0.217		0.46	
Adjusted R2	0.34		0.338		0.049		0.215		0.459	
F	180.016		117.987		18.922		95.978		295.101	

** Significantly correlated at 0.01 level (bilateral).

Table is the regression relationship between psychological capital and prosocial behavior. According to model 1, psychological capital has a significant positive effect on prosocial behavior

(Beta =0.585, P<0.001), with an explanatory power of 34.2%, which verifies hypothesis H3. In Model 2, self-efficacy had a significant positive effect on prosocial behavior (Beta =0.583, P<0.001), with a good explanatory power of 34.0%. Model 3 shows the specific relationship between toughness and prosocial behavior (Beta =0.228, P<0.001). Model 4 showed that hope had a significant positive effect on prosocial behavior (Beta =0.466, P<0.001), suggesting that hope could help promote prosocial behavior, and individuals who were confident in commitment and effort were more inclined to produce prosocial behavior. Model 5 was the most significant (Beta =0.678, P<0.001), with an explanatory power of 46.0%. The results show that optimism has a significant positive effect on prosocial behavior, indicating that individuals with positive attributions to current status or future prospects are more likely to produce prosocial behavior.

5.1.4 The Mediating Role of Psychological Capital

Table 5: The mediating role of psychological capital

model variables	Dependent variable: prosocial behavior			Dependent variable: psychological capital				
	Model 1	P	Model 3	P	Model 4	P	Model 2	P
Sports participation	0.414	0.00**			0.166	0.00**	0.493	0.00**
Psychological capital			0.585	0.000**	0.503	0.00**		
R2	0.162		0.383		0.396		0.239	
Adjusted R2	0.159		0.38		0.391		0.236	
F	54.72		175.9		92.63		88.99	

** Significantly correlated at 0.01 level (bilateral).

The mediating effect of psychological capital is tested by the stepwise test of mediating effect. According to model 1, sports participation has a significant positive impact on prosocial behavior of college students (Beta=0.414, P<0.001). According to Model 2, sports participation has a significant positive effect on psychological capital (Beta=0.493, P<0.001); according to model 3, psychological capital has a significant positive effect on prosocial behavior of college students (Beta =0.585, P<0.001). Under the premise of the first three tests, When sports participation and psychological capital were put into the regression model, model 4 was obtained. At this time, the coefficient of sports participation dropped from 0.414 to 0.166, reaching a significant level of 0.01, and the regression coefficient of psychological capital was 0.503, which was significant, indicating that psychological capital played a partial intermediary role between sports participation and prosocial behavior of college students.

6. Discussion and Analysis of Results

6.1 Analysis of the Influence of Sports Participation on Prosocial Behavior of College Students

Behavioral participation significantly influences prosocial behavior of college students. Students learn to help each other in group sports activities and are willing to contribute to others or the group. In the process of individual training, I feel the improvement of ability and quality, enhance the sense of self-efficacy, and have more confidence and ability to help others when they need help. In particular, sports competitions or projects requiring high physical strength and endurance can realize self-cognition and self-transcendence, effectively cultivate students' resilience to cope with setbacks and challenges, and enhance students' pro-social behavior. In the interview with Luo students in a university, he mentioned that he felt physically enhanced in the process of participating in sports activities, and that he gradually became stronger and more confident in

offering help when he needed it.

Emotional participation has a significant impact on prosocial behavior of college students. The cultivation of collective identity of students in the process of growth and development mainly comes from the school, and individual socialization cannot be achieved without the cultivation of collective identity. From college PHYSICAL education to various types of sports associations, from daily recreation to participation in sports competitions, individuals can use sports activities to integrate into the collective, show their self-image, expand their social scope, improve their social adaptability and overcome negative psychology. Positive cognition of sports activities and happiness gained from sports activities will make individuals have more sense of gain, cultivate optimistic character and enhance the occurrence of pro-social behaviors.

Cognitive participation also has significant influence on prosocial behavior of college students. Participating in sports requires following the rules and learning the consequences of your actions. This can cultivate students' awareness of rules, obey the mainstream value judgment and regulate their own behavior. Prosocial behavior, in a sense, is a higher level of social rules. According to the learning theory of prosocial behavior theory, individuals who learn and follow social rules can achieve development in social interaction, and individuals are more inclined to carry out prosocial behavior in a rule-abiding exercise environment. In addition, participating in sports competitions of different events can exercise college students' competition and cooperation, and cultivate their sense of respect and democracy. The interaction and cooperation of different characters on the field can develop the ability of attention and empathy. Psychologist Hoffman believes that empathy is the intrinsic motivation basis for prosocial behaviors such as helping others and cooperation. According to the empathetic prosocial theory, prosocial behavior can be triggered only when individuals empathize with others in difficulties. Through physical activity, individuals can better identify and feel others' emotions and emotional states, and provide motivation and information functions for prosocial behavior decision making.

6.2 Analysis of the Mediating Effect of Psychological Capital

In this study, psychological capital plays a partially mediating role in sports participation and prosocial behavior of college students. That is, sports participation can influence prosocial behavior through the change of psychological capital. Sports participation has a significant positive impact on all dimensions of psychological capital, which proves that participating in sports activities can enhance self-efficacy, improve resilience to overcome difficulties and challenges, and thus be willing to accept challenges in the case of needing a helping hand. Sports can also convey optimism and hope, and foster a positive, healthy attitude that makes you more willing to help others. In an interview with Mr. Wang, a physical education teacher in a university in Shanghai, he explained this phenomenon from a physiological perspective. Sports participation can promote human blood circulation, improve brain material supply, effectively adjust the brain cells that manage learning, and make individuals full of vitality and spirit. Long-term exercise will also enhance individual physical function, brain regulation ability and response flexibility to further improve, thus more confident, optimistic attitude, improve the sense of self-efficacy. Psychological capital has a significant positive influence on prosocial behavior, and the higher the individual psychological capital is, the more likely the prosocial behavior will be. This may be due to the fact that the higher the level of psychological capital, the more it provides adequate energy compensation and the more motivated it is to engage in the activities that require assistance.

7. Research Conclusions and Implications

This paper proposes the relevant mechanism of sports participation affecting prosocial behavior of college students. Based on empirical research, it is concluded that:

(1) Active participation in sports activities can significantly promote the generation of pro-social behaviors of college students. Behavioral participation, affective participation and cognitive participation have significant positive effects on college students' prosocial behavior.

(2) Sports participation significantly promotes psychological capital. Cognitive participation has a high degree of influence on psychological capital, followed by affective participation, and finally behavioral participation. Psychological capital has a significant positive influence on prosocial behavior of college students, and the influence degree is divided into optimism, self-efficacy, hope and resilience from high to low.

(3) Sports participation, as an influential factor affecting prosocial behavior of college students, can directly influence prosocial behavior and indirectly promote prosocial behavior through individual psychological capital.

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